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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/865,575	05/29/2001	Yukie Nakano	109639	3682

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EXAMINER
THOMAS, ERIC W

ART UNIT	PAPER NUMBER
2831	8

DATE MAILED: 09/04/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/865,575	Applicant(s) NAKANO ET AL.
	Examiner Eric W Thomas	Art Unit 2831

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 August 2002* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-19* is/are pending in the application.

4a) Of the above claim(s) *16-19* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-15* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *29 May 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Introduction:
The examiner acknowledges, as recommended in the MPEP, the applicant's submission of the amendment dated 8/16/02. At this point, claims 1-15 have been amended; and claims 16-19 have been withdrawn from consideration. Thus, claims 1-19 are pending in the instant application.

Election/Restrictions

1. Applicant's election of Group I in Paper No. 7 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
> (e) the invention was described in-
> (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or
> (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

2. Claims 1-4 are rejected under 35 U.S.C. 102(e) as being anticipated by Inomata et al. (US 6,205,014).

Regarding claim 1, Inomata et al. disclose a multilayer ceramic capacitor comprising internal electrode layers and dielectric layers, wherein the dielectric layers comprise particles, wherein an average particle diameter (r), in a direction parallel with the internal electrode layers is larger than a thickness (d) of said dielectric layer (see col. 3 lines 15-23).

Regarding claim 2, as seen in col. 3 lines 15-23, Inomata et al. disclose wherein a ratio (R/d) between said average particle diameter (r) and the thickness (d) of the dielectric layers satisfies $1<R/d<3$.

Regarding claim 3, Inomata et al. disclose a main component of the internal electrode layers is Ni (col. 3 lines 24-27).

Regarding claim 4, Inomata et al. disclose a main component of the internal electrode layers is Ni (col. 3 lines 24-27).

3. Claims 1-4, 7-11, 14-15 are rejected under 35 U.S.C. 102(b) as being anticipated by Nomura et al. (US 5,319,517).

Nomura et al. disclose a multilayer ceramic capacitor comprising internal electrode layers and dielectric layers, wherein the dielectric layers comprise particles, wherein an average particle diameter (r), in a direction parallel with the internal electrode layers is larger than a thickness (d) of said dielectric layer (see col. 1 lines 60-65 & col. 5 lines 62-64).

Regarding claim 2, as seen in col. 1 lines 60-65 & col. 5 lines 62-64, Nomura et al. disclose wherein a ratio (R/d) between said average particle diameter (r) and the

thickness (d) of the dielectric layers satisfies 1<R/d<3.

Regarding claim 3, Nomura et al. disclose a main component of the internal electrode layers is Ni (col. 2 lines 50-52 lines 24-27).

Regarding claim 4, Nomura et al. disclose a main component of the internal electrode layers is Ni (col. 2 lines 50-52 lines 24-27).

Regarding claim 7, Nomura et al. disclose the dielectric layers can have a thickness less than 3 μm (see col. 1 lines 60-65).

Regarding claim 8, Nomura et al. disclose the dielectric layers can have a thickness less than 3 μm (see col. 1 lines 60-65).

Regarding claim 9, Nomura et al. disclose the dielectric layers can have a thickness less than 3 μm (see col. 1 lines 60-65).

Regarding claim 10, Nomura et al. disclose the dielectric layer comprises the dielectric particles and a grain boundary phase, and an area ratio of the grain boundary phase in a section of the dielectric layer is 2 % (see col. 4 lines 6-10).

Regarding claim 11, Nomura et al. disclose the dielectric layer comprises the dielectric particles and a grain boundary phase, and an area ratio of the grain boundary phase in a section of the dielectric layer is 2 % (see col. 4 lines 6-10).

Regarding claim 14, Nomura et al. disclose the dielectric layers comprise dielectric particles, a grain boundary and grain boundary phase comprises a segregation phase that consists of Mn, Y, V and W.

Regarding claim 15, Nomura et al. disclose the dielectric layers comprise dielectric particles, a grain boundary and grain boundary phase comprises a segregation phase that consists of Mn, Y, V and W.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 5-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Inomata et al. (US 6,205,014).

Regarding claim 5, Inomata et al. disclose the claimed invention except for the internal electrodes comprising Ni having Fe segregated in the internal electrodes. Ni electrodes having Fe segregated in the internal electrodes are known in the art. It would have been obvious to one having ordinary skill in the art at the time the invention

was made to form the internal electrodes of Inomata et al. of a nickel material having Fe segregated in the internal electrode, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416.

Regarding claim 6, Inomata et al. disclose the claimed invention except for the internal electrodes comprising Ni having Fe segregated in the internal electrodes. Ni electrodes having Fe segregated in the internal electrodes are known in the art. It would have been obvious to one having ordinary skill in the art at the time the invention was made to form the internal electrodes of Inomata et al. of a nickel material having Fe segregated in the internal electrode, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416.

7. Claims 12-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Inomata et al. (US 6,205,014) in view of Iguchi et al. (US 5,977,006).

Inomata et al. disclose the claimed invention except for the dielectric particles having a core-shell structure.

Iguchi et al. teach the use of core-shell structure dielectric particles for dielectric layers in multilayer ceramic capacitors. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use the ceramic material of Iguchi et al. in the capacitor of Inomata et al., since such a modification would provide a dielectric having a high dielectric constant with a stable temperature characteristic.

Regarding claim 13, Inomata et al. disclose the claimed invention except for the dielectric particles have a core-shell structure. Iguchi et al. teach the use of core-shell structure dielectric particles for dielectric layers in multilayer ceramic capacitors. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use the ceramic material of Iguchi et al. in the capacitor of Inomata et al., since such a modification would provide a dielectric having a high dielectric constant with a stable temperature characteristic.

Response to Arguments

8. Applicant's arguments filed 8/16/02 has been fully considered but they are not persuasive.

I) Applicant's argument "Inomata et al. do not teach, disclose or suggest dielectric layers comprising particles wherein "an average particle diameter (R), in a direction parallel with said internal electrolyte layers, is larger than a thickness (d) of the dielectric layer," as recited in claim 1" is not persuasive. The examiner maintains the position that the Inomata et al. reference suggests a multilayer ceramic capacitor comprising internal electrode layers and dielectric layers, wherein the dielectric layers comprise particles, wherein an average particle diameter (r), in a direction parallel with the internal electrode layers is larger than a thickness (d) of said dielectric layer (see col. 3 lines 15-23).

> Further, each of the dielectric layers may preferably have a layer thickness in the range of 5 μm or thinner, although it may have a layer thickness of thicker than 5 μm. Moreover, the ceramic grain may preferably have a mean grain size of 3.5 μm or larger, although the grain sizes of the ceramics depend upon the thickness of the dielectric layer. If the thickness of the dielectric layer is thicker than 5 μm, the CR product of the resulting multilayer ceramic capacitor may be decreased to a remarkable extent.

II) Applicant's argument "Nomura et al. also does not teach, disclose or suggest dielectric layers comprising particles "wherein an average particle diameter (R), in a direction parallel with the internal electrode layers, is larger than a thickness (d) of the dielectric layer," as recited in claim 1" is not persuasive. The examiner maintains the position that the Nomura et al. reference suggests a multilayer ceramic capacitor comprising internal electrode layers and dielectric layers, wherein the dielectric layers comprise particles, wherein an average particle diameter (r), in a direction parallel with the internal electrode layers is larger than a thickness (d) of said dielectric layer (see col. 1 lines 60-65 & col. 5 lines 62-64).

Another object of the present invention is to provide a multilayer ceramic chip capacitor wherein an initial loss of insulation resistance is minimized when dielectric layers have a thickness of 10 μm or less.

Also preferably, the grains in the dielectric layers 3 have a mean grain size of about 1 to 5 μm.

Conclusion

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric W Thomas whose telephone number is (703) 305-0878. The examiner can normally be reached on Monday-Friday 6:00 AM-6:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dean Reichard can be reached on 703-308-3682. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-3432 for regular communications and (703) 305-1341 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

ewt
August 28, 2002

Dean A. Reichard 8/30/02

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